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John D. Affinito

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EXAMINER

QUARTERMAN, KEVIN J

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n N .

10/603,874

Applicant(s)

AFFINITO ET AL.

Examiner

Kevin Quarterman

Art Unit

2879

*Am*

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 10-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0903.1203.0404.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-9, drawn to an organic optoelectronic device, classified in class 313, subclass 504.
  - II. Claims 10-24, drawn to a method of making an organic optoelectronic device, classified in class 427, subclass 497.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the organic optoelectronic device can be made by depositing a first electrode on a sacrificial layer; depositing an electron transport layer adjacent the first electrode; depositing an active layer adjacent the electron transport layer; depositing a hole transport layer adjacent the active layer; depositing a second electrode adjacent the hole transport layer; depositing a substrate adjacent the second electrode; removing the sacrificial layer, wherein at least one of the layers selected from the group consisting of the hole transport layer, the active layer, and the electron transport layer, and combinations thereof, comprises a crosslinked molecularly doped polymer layer.

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3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Patricia Prior on 27 May 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-9.

Affirmation of this election must be made by applicant in replying to this Office action.

Claims 10-24 are withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by

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a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Drawings***

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

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Reference characters "206" of Figure 2a and "130" and "300" of Figure 3 are not mentioned in the description. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

9. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the hole transport layer, the luminescent layer, the active layer, the second electrode, the charge injection layer, and the hole-blocking layer must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

10. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

11. Claim 1 recites the limitation "the electron transport layer" in line 8 of the claim. There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 USC § 112***

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12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Independent claim 1 recites an organic device comprising a *luminescent layer*. The luminescent layer is not mentioned in the specification nor shown in the drawings. Thus, the luminescent layer is not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. Due to their dependency upon independent claim 1, claims 2-9 also fail to comply with the enablement requirement.

***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Arai (US 6333065).

16. Regarding independent claim 1, Figure 2 of Arai shows an organic optoelectronic device comprising a first electrode (22); a hole transport layer (24); a luminescent layer (25); an active layer (25); and a second electrode (col. 5, ln. 6-9), wherein at least one

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of the layers selected from the group consisting of the hole transport layer, the active layer, and the electron transport layer, and combinations thereof, comprises a crosslinked molecularly doped polymer layer (col. 10, ln. 60-67).

17. Regarding claim 2, Figure 2 of Arai shows the device comprising a charge injection layer (23).

18. Regarding claim 3, Arai discloses the device comprising a hole-blocking layer (col. 8, ln. 39-45).

19. Regarding claim 4, Arai discloses that the first electrode comprises a transparent conductive oxide (col. 5, ln. 29-41).

20. Regarding claim 5, Arai discloses that the second electrode comprises a metal cathode (col. 6, ln. 1-24).

21. Regarding claim 6, Arai discloses that the active layer is selected from light-emitting layers, light absorbing layers, and electric current generating layers (col. 5, ln. 22).

22. Regarding claim 7, Arai discloses the hole transport layer being a molecularly doped polymer layer and wherein a molecular dopant is selected from tertiary aromatic amines (col. 11, ln. 43-55).

23. Regarding claim 8, Arai discloses the active layer being a molecularly doped polymer layer and wherein a molecular dopant is selected from metal (8-quinolinolato) chelates, quinacridone derivatives, and triaryl amine derivatives (col. 9, ln. 4-17).

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24. Regarding claim 9, Arai discloses the electron transport layer being a molecularly doped polymer layer and wherein a molecular dopant is selected from metal (8-quinolinolato) chelates (col. 12, ln. 14-27).

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Joseph Williams*  
*for*

Kevin Quarterman  
Examiner  
Art Unit 2879

kq *KQ*  
1 June 2004

Nimesh Patel  
Supervisory Patent Examiner  
Art Unit 2879